ADDENDUM TO APPENDIX IV

EFFECTS OF FILTRONA AND BORGWALDT LATEX
SLEEVE HOLDERS ON BARCLAY TAR YIELDS

Two smoking machine cigarette holders use stretched latex sleeves. The Filtrona holder was originally designed for joining experimental filters to standard tobacco rods. It is 17 mm long and requires application of vacuum to insert filters. The force applied to the filter by the latex sleeve depends on its diameter, wall thickness and "stretch" when placed in the holder. The Borgwaldt holder, designed for their rotary smoking machine, is based on similar principles but is 12 mm long.

Dr. Roger Kamm of the Massachusetts Institute of Technology has measured the pressures exerted by various cigarette holders and by human lips.

Human lip pressures average about 35 torr and rarely exceed 100 torr. The dental dam used by the FTC and U.S. industry in the Cambridge pad holder exerts a pressure of 50 torr. The Borgwaldt holder with standard 8 mm i.d. tubing exerts a pressure of 120 torr. The Filtrona holder pressure ranges from 200 to 500 torr depending on the type of latex and its insertion.

Tar measurements performed by Brown & Williamson are summarized in the attached graph. The Borgwaldt holder increases tar by 0.3 mg. The Filtrona holder in the extreme case increases tar to 3.3 mg.

Separate measurements on Actron filters by Dr. Kamm show a ventilation reduction of 5% at a pressure of 200 torr. This is in line with the observed tar changes.

Barclay tar deliveries can be increased by exerting extreme pressure on the filter. Within the range of observed human lip pressures, however, tar increases are negligible, 0.5 mg at most. Much greater changes are much more easily achieved by human smokers by varying either puff volume or puffing frequency.

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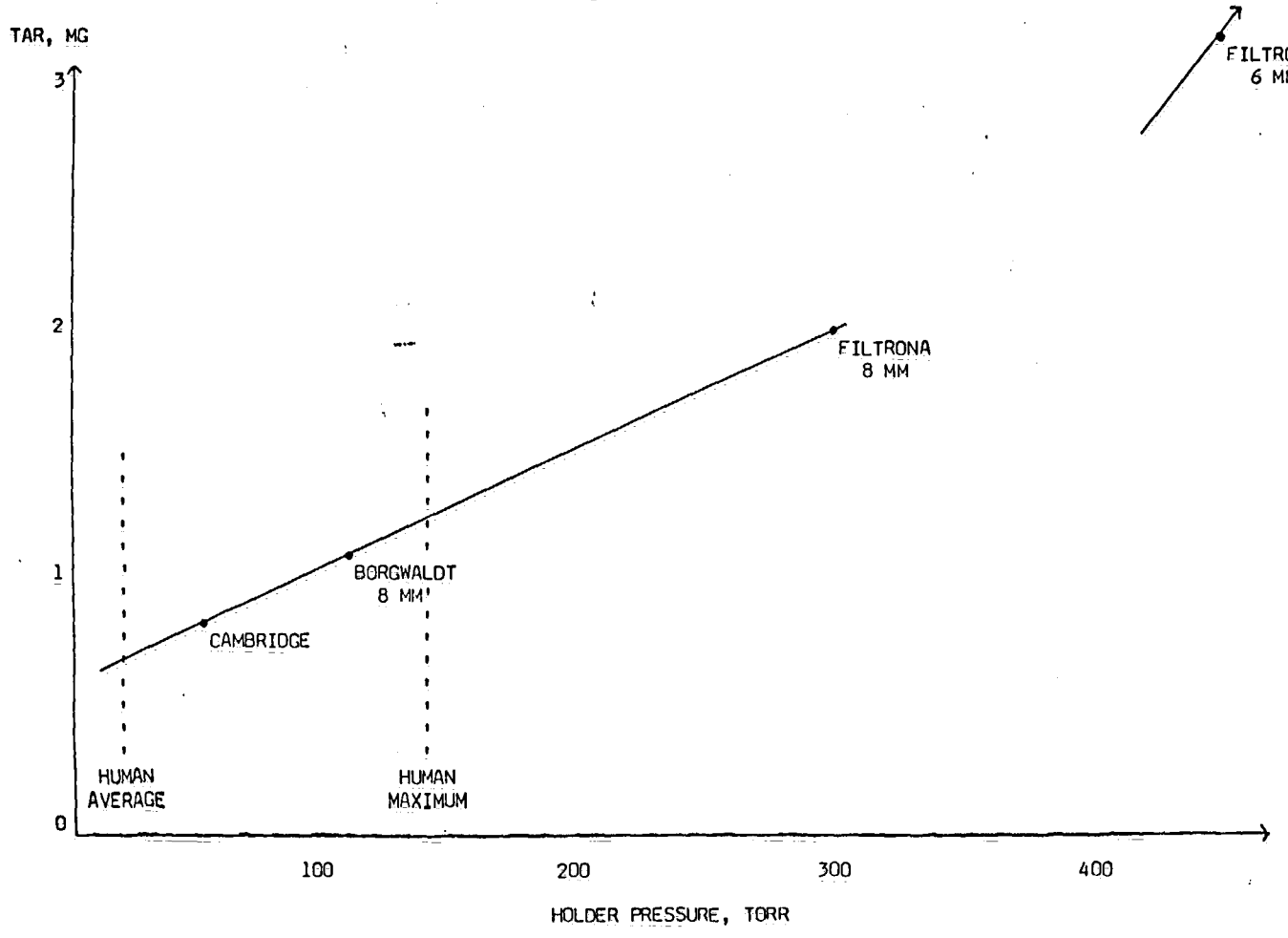
Source: https://www.industrydocuments.ucsf.edu/docs/sjmk0000

EFFECT OF HOLDER PRESSURE
ON BARCLAY TAR



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